

Please amend the application as follows:

IN THE CLAIMS:

Please cancel claims 1-16 without prejudice and substitute thereof the following new claims 17-42.

Al
--17. A method for tracking the location of mobile units, comprising the steps of:

providing a plurality of mobile units each having a wireless transmitter and a unique address;

providing a plurality of stationary base units, each having a phase array antenna with one pair of antenna elements;

receiving a signal including an address from at least one mobile unit at least one stationary base unit of said plurality of stationary base units via the phase array antenna;

measuring the phase difference of the signal arriving at one pair of antenna elements of said phase array antenna at more than one stationary base unit of said plurality of stationary base units from each mobile unit; and

calculating the coordinates of the location of each mobile unit as a function of the phase difference.

18. The method according to claim 17, wherein at least one stationary base unit of said plurality of stationary base units periodically polls at least one mobile unit to perform a continuous tracking of said at least one mobile unit by transmission of said signal from said at least one mobile unit to said plurality of stationary base units, and wherein the wireless transmitter of said at least one mobile unit is a transceiver.

19. The method according to claim 18, wherein the step of measuring the phase difference is performed in the said plurality of stationary base units.

20. The method according to claim 19, wherein the step of calculating the coordinates is performed in a main unit connected to at least one stationary base unit of said plurality of stationary base units.

21. The method according to claim 20, wherein each mobile unit has at least one sensor and the signal includes an information signal from the at least one sensor and wherein the information signal is processed by the main unit.

22. The method according to claim 17, wherein the step of calculating the coordinates comprises calculating the polar coordinates of each mobile unit.

23. The method according to claim 17, wherein at least two stationary base units are disposed at a predetermined distance from each other, and wherein the step of calculating the coordinates of each mobile unit comprises measuring the azimuth of the signal from a mobile unit received at each stationary base unit and calculating the coordinates of the location of the mobile unit as a function of the azimuths.

24. The method according to claim 17, further comprising the step of providing at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of the mobile units using the at least one reference transmitter.

25. The method according to claim 24, wherein the step of calibrating comprises measuring the phase difference between the signal arriving at each of the pair of antenna elements from at least one reference transmitter, calculating the coordinates of the location of the at least

one reference transmitter, and correcting future calculations of the coordinates of the mobile units by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter.

26. The method according to claim 24, wherein the at least one reference transmitter has at least one sensor.

27. The method according to claim 24, wherein the at least one reference transmitter is a transceiver.

28. A method for tracking the location of mobile units, comprising the steps of:

providing a plurality of mobile units each having a wireless transmitter and a unique address;

providing a single stationary base unit having a phase array antenna with three or more antenna elements;

receiving a signal including an address from at least one mobile unit at the stationary base unit via the phase array antenna;

measuring the phase difference of the signal arriving at said three or more antenna elements of the phase array antenna at the stationary base unit from each mobile unit; and

calculating the coordinates of the location of each mobile unit as a function of the phase difference.

29. The method according to claim 28, wherein said stationary base unit periodically polls at least one mobile unit to perform a continuous tracking of said at least one mobile unit by transmission of said signal from said at least one mobile unit to said stationary base unit, and wherein the wireless transmitter of said at least one mobile unit is a transceiver.

30. The method according to claim 29, wherein the step of measuring the phase difference is performed in the stationary base unit.

31. The method according to claim 30, wherein the step of calculating the coordinates is performed in a main unit connected to said stationary base unit.

32. The method according to claim 31, wherein each mobile unit has at least one sensor and the signal includes an information signal from at least one sensor, and wherein the information signal is processed by the main unit.

33. The method according to claim 28, wherein the step of calculating the coordinates comprises calculating the polar coordinates of each mobile unit.

34. The method according to claim 28, further comprising the step of providing at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of the mobile units using the at least one reference transmitter.

35. The method according to claim 34, wherein the step of calibrating comprises measuring the phase difference between the signal arriving at each of three or more antenna element from the at least one reference transmitter, calculating the coordinates of the location of the at least one reference transmitter and correcting future calculations of the coordinates of the mobile units by the difference between the calculated coordinates of the at least one reference transmitter and the actual location of the at least one reference transmitter.

36. The method according to claim 34, wherein the at least one reference transmitter has at least one sensor.

37. The method according to claim 34, wherein the at least one reference transmitter is a transceiver.

38. A method for calibrating a system for tracking the location of mobile units, comprising the steps of:

providing at least one stationary base unit having a phase array antenna having antenna elements for receiving signals from a plurality of mobile wireless transmitter units and at least one reference wireless transmitter disposed at a fixed location and having a unique identifying address;

receiving a signal including an address from the at least one reference transceiver at the at least one stationary base unit via the phase array antenna;

measuring the phase difference between the signal arriving at each antenna element from the at least one reference transmitter;

calculating the coordinates of the location of the at least one reference transmitter; and

correcting future calculations of the coordinates of the mobile units by the difference between the calculated coordinates of the at least one reference transmitter and

the actual location of the at least one reference transmitter.

39. The method according to claim 38, wherein at least one said stationary base unit periodically polls at least one mobile unit to perform continuous tracking of said at least one mobile unit by transmission of said signal from said at least one mobile unit to said at least one stationary base unit, and wherein said wireless transmitter is a transceiver.

40. The method according to claim 38, wherein the step of measuring the phase difference is performed in the at least one stationary base unit.

41. The method according to claim 38, wherein the step of calculating the coordinates is performed in a main unit connected to said at least one stationary base unit.

42. The method according to claim 38, wherein the calculated coordinates are polar coordinates.--

REMARKS

Favorable reconsideration of this application as presented herein is respectfully requested. Claims 1-16 are canceled and new Claims 17-42 are added in order to clarify the nature of the current invention.